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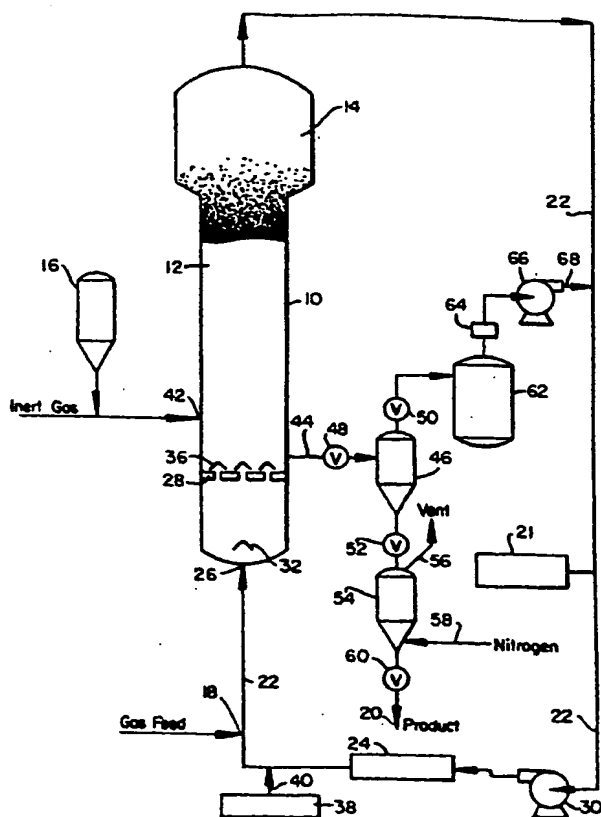
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(54) Title: **GAS PHASE POLYMERIZATION AND METHOD OF CONTROLLING SAME**



(57) Abstract: A process for controlling a continuous gas phase exothermic process in a reactor comprising: (i) effecting a gas phase exothermic reaction under a set of operating conditions in the presence of a cooling agent, the cooling agent having a pre-selected concentration and feed rate of an induced cooling agent; (ii) determining a maximum production rate (I) without regard to limitations due to the cooling agent under the operating conditions; (iii) determining a maximum production rate (II) with regard to limitations due to the cooling agent under the operating conditions; (iv) calculating an optimal concentration of the induced cooling agent such that the difference between (I) and (II) is minimized; and (v) adjusting the feed rate of the induced cooling agent to achieve the concentration value calculated in (iv).



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